Antibiotic Resistance & Patient Safety Portal

FAQs: Antibiotic Resistance HAI Data

These answers pertain to the Antibiotic Resistance (AR) Healthcare-Associated Infection (HAI) dataset of the AR & Patient Safety Portal. For more information about the AR & Patient Safety Portal Antibiotic Resistance HAI dataset, visit: http://www.cdc.gov/hai/surveillance.

Frequently Asked Questions

It looks like a particular state/territory/district has a very high percent resistance in the Portal. Does this mean that they have a lot of antibiotic resistance?

Not necessarily. It is likely that regions with high percent resistance also have lot of antibiotic resistant infections, but additional data are needed before this conclusion can be made. First, while the Portal data show that antibiotic-resistant bacteria are playing a role in HAIs, the main metric (percent resistance or %R) only shows the proportion of bacteria associated with CAUTIs, CLABSIs, and SSIs that are resistant. There are other types of healthcare-associated infections to consider, so this metric does not reflect total burden or a total count of all resistant infections. Second, because percent resistance is calculated as a proportion, it is possible that a low number of resistant infections (e.g., 20) can produce a high %R if the total number of infections from the bacteria, regardless of resistance traits, are also low (e.g., 30). This means that while percent resistance may be "high" in one area, it may not mean that more people are getting resistant infections compared to another area. The Portal does show, however, that resistant bacteria—some of which are ranked as urgent or serious threats—are occurring in various types of healthcare settings and, therefore, are at risk of spreading. Thus, the metrics in the Portal may best be used as indicators of which type of antibiotic resistance problem may be most pressing and worthy of further investigation.

- For more information regarding the total burden of disease from antibiotic-resistant organisms (HAI or not) in the United States, see the CDC COVID-19: U.S. Impact on Antimicrobial Resistance, Special Report 2022.
- For more information regarding the incidence of healthcare-associated infections, see the latest National and State Healthcare-Associated Infections Progress Report.

Where can I learn more about the definitions for antibiotic resistance used in the Portal?

See the "Phenotype Definitions" document on the "About the Data" page of the Patient Safety Portal, which includes definitions of antibiotic resistance used in Portal.

Which Surgical Site Infections (SSI) are displayed in the Portal?

The Portal includes all surgical site infections following an inpatient procedure that had a primarily-closed incision and were reported to NHSN. Find additional information on the burden of specific surgical site infections in the most recent National and State Healthcare-Associated Infections Progress Report. More information about SSIs collected by NHSN can be found on the NHSN website: http://www.cdc.gov/nhsn/acute-care-hospital/ssi/index.html.

Where can I learn more about the types of infections included in the Portal, or details about how the summary measures for antibiotic resistance are calculated?

More information on the types if infections and summary measures reflected in the Portal data can be found in the "Data Methodology" document on the "About the Data" page of the Patient Safety Portal.

It looks like there are changes in the percent resistance over time. Does this mean that antibiotic resistance is increasing or decreasing?

The dataset does not include statistical trend analyses or other statistical comparative tests, and this should be considered when interpreting data presented on the Portal. Due to changes in NHSN definitions and surveillance protocols, caution should be used when comparing resistance data between years. The AR HAI dataset should not be used to make definitive conclusions about the changes in antimicrobial resistance over time.

Are antibiotic resistance data in the Portal confirmed by CDC laboratories? Does the Portal account for changes in Clinical & Laboratory Standards Institute (CLSI) breakpoints over time?

The Portal presents antibiotic resistance data as they are reported to NHSN. These data represent the results of laboratory testing performed by each healthcare facility and are therefore based on the breakpoints used by each facility's laboratory at the time the antimicrobial testing was completed. More information can be found in the "Data Methodology" document on the "About the Data" page of the Patient Safety Portal.

I am interested in using the Portal data for my own analysis. What are the limitations to using and interpreting this data?

The Portal intends to make NHSN data easily accessible, and we encourage further exploration. Before conducting your own analysis, however, see the "Limitations of the Data" section in the "Data Methodology" document on the "About the Data" page of the Patient Safety Portal to fully understand the limitations of using these data to study the burden of antibiotic resistance.